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A TREATISE
ON THE
VIRTUES AND EFFICACY
OF A
CRUST OF BREAD,

In Relieving and Curing Diseases.

BY A PHYSICIAN.

First American from the tenth London Edition.

SALEM:
PUBLISHED BY HENRY WHIPPLE.
1844.

*Oh son of Robinson (H.)
Another Copy*

Sam. W. Greene M.D.

from

Wm. H. Dale M.D.

Dec. 25th 1874.

Robinson, Nicholas.
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A T R E A T I S E
ON THE
V I R T U E S A N D E F F I C A C Y
OF THE
S A L I V A, O R F A S T I N G S P I T T L E.
BEING CONVEYED INTO THE INTESTINES,
BY EATING A
CRUST OF BREAD,
EARLY IN A MORNING FASTING,
IN RELIEVING
THE GOUT, SCURVEY, GRAVEL, STONE, RHEUMATISM, &c..
ARISING FROM OBSTRUCTIONS: ;
ALSO,
ON THE GREAT CURES ACCOMPLISHED BY THE
F A S T I N G S P I T T L E,
WHEN EXTERNALLY APPLIED TO
RECENT CUTS, SORE EYES, CORNS, WARTS, &c.

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**BY A PHYSICIAN.**  
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First American from the tenth London Edition.

"Homines enim ad Deos nulla re propius accedunt, quam salutem hominibus dando. — Cicero.

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C SALEM:

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## INTRODUCTION.

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*Efficacy of the Recrements of the Body, to the digestion of our Food, the circulation of the Blood, and the secretion of the alimentary Fluids.*

I AM sensible that few physicians have examined these Recrements of the body with that attention, accuracy, and diligence, that a point of so great importance requires; and though they are many and divers, yet they all contribute their share to the maceration, attenuation, and digestion of our aliments in the mouth; to the greater liquidation of the chyle in the stomach and intestines; to the more perfect fusion of the blood in the veins and arteries; and the better secretion of the various juices, separated and collected in the different folliculi or receptacles, situated in the various organs of the body, and which are ordained by nature, to serve very great and important uses of the animal economy.

These Recrements are distinguished from the excrementitious discharges, as the latter are thrown out of the body, and of no further use in support of the several respective parts of the animal, and which therefore are called the Excrements; while the former serve many great and necessary purposes in life; so that I question whether any animal circulation, secretion, or excretion, could be carried on, without the assistance of these recrements; for all the motions of the chyle, blood, and animal juices, would stagnate and stand still in an instant, were it not for the saliva, bile, pancreatic juice, and divers other fluids secreted from the arterial blood: And as these secreted fluids are the main principles that support the life of animals; so in the most noxious, venomous, and poisonous creatures, where the great mischief is done by a bite, and the

infusion of a poisonous fluid into the wound, as is done by the viper; then, upon reflection, we discover that there must necessarily be a counter-poison, generated and secreted somewhere in the body itself, to preserve this noxious animal from the force and deadly effects of its own poison.

But of all the various separations and secretions, I know none of so much consequence to the body, as that secreted liquor we call the Saliva, or what is generally meant by the Fasting Spittle, as will more clearly appear, when we come to speak of its effects and consequences upon the bodies of rational animals; for without this secreted fluid, we could neither chew our victuals, nor swallow our food into the stomach, nor digest it, after it was there; so that all the motions of the body would grow dry, stagnate, and be at perpetual rest, were not our several aliments mixed, attenuated, and sufficiently diluted in the mouth, by the penetrating salts of the salival fluid, before they are swallowed down into the stomach.

And the patient may assure himself, that, if these rules and cautions, laid down in the following pages, are but rightly pursued, and duly executed, they will mightily contribute, not only to preserve him in health, but also prove extremely efficacious to restore that invaluable blessing, whenever overpowered by the force of a disease. And in all these cases, I find little occasion for the use of medicine, provided the patient eats his crust punctually in a morning fasting, and is attentive to the air, diet, and exercise, I have set before him.

# A TREATISE, &c. &c.

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## SECTION I.

*Of the Virtue of a Crust of Bread, eat early in a Morning fasting, with its force and efficacy in relieving the Scurvy, Gravel, Stone, Gout, Rheumatism, and various other diseases.*

I am now going to speak of a remedy second to none in the cure and relief given in the foregoing diseases; it may indeed serve other intentions and purposes as far as I know, but in the gravel, stone, gout, and rheumatism, I know it to be the best and surest remedy hitherto discovered; and if you join fasting to this noble medicine, I know none more efficacious. Would you know this invaluable secret, it is abstinence: I say abstinence;—but by the word abstinence, I do not mean a mere negative remedy, as if fasting was to do all the work herself, but suffering nature, in due course of time, to resolve the obstructions, and at her leisure, to digest off the viscid juices and corrupt humors; for abstinence is only necessary as an assistant, both to improve the operation, and enable the crust of bread, ate early in the morning fasting, to exert its virtues with more salutary effects: for all medicines operate best upon an empty stomach, and few purging medicines are advised, if they are greatly efficacious, but that they are prescribed to be taken in a morning early, and the first thing that a patient does; and he is often advised not to eat till two or three hours after.

I choose to express myself in the vulgar manner of speech, because the visible relief given in the gravel or stone is usually ascribed to the bread alone, and not to any other assistant remedy mixed with it in the mouth, or in its passage to the stomach, and so into the blood; for it is a truth, established by constant observation and experience, that divers persons, by eating a crust of bread in a morning early, and fasting two or three hours after it, have received great relief in the gravel; others have declared, that under the stone their severest symptoms have been mightily mitigated; and some again, under the most painful symptoms of the gout and rheumatism, have found their pains greatly relieved by adhering to this remedy, and applying chewed bread, well moistened with the fasting saliva, warm to the gouty parts: and I do not speak these things of two or three people only, that have been thus accidentally relieved, but of hundreds, that, within my own knowl-

edge, have received great benefit from this invaluable and salutary medicine.

Now to examine the main point, and enquire upon what principles this great relief is given; for if we consider the bread itself, this concrete can have no efficacy, at one time more than another; if the efficacy, I say, proceeds from the intrinsic principles of the bread; for then a crust ate at five or six in the afternoon, or at a proper distance from our meals, must produce the same effects upon the urinary passages;—upon the obstruction of the joints and membranes of the muscles, that it does when eat in the morning fasting; and therefore we are to consider, whether this virtue and efficacy, supposed to be lodged in the bread, may not more properly be owing to some other assisting cause, than to the piece of bread itself; for we know very well, that the matter of fact is so, *viz:* That a crust of bread, early ate in the morning fasting, does produce these good effects in the aforesaid diseases; and if we search into the virtues of bread, and consider what ingredients there is in a crust, we shall not discover any virtues in the bread, more than to nourish the body; for the purest wheat, when changed into never so many forms, only produces a more elegant nourishment. This is the prime law of its nature, and therefore we cannot suppose that the bread itself can contain any powers capable of producing these principles of dissolution of the gravel, attenuation of the phlegm, and mitigation of the painful symptoms of the stone; and therefore, I must conclude, that the bread itself does not contain any principles powerful enough to accomplish that great relief, that is often received from eating a crust of bread in a morning early; for then its great efficacy would sensibly appear, from the great quantities we eat of this aliment, in our several meals, at morning, noon, and night; and hence I infer, that the good that is known to ensue, from eating the bread, must be the result of somewhat that accompanies the bread, and that we conceive to be nothing but the fasting saliva, which leads me to speak of the origin, secretion, and composition of this fluid, or what we vulgarly call the fasting spittle; as it is a fluid that serves divers great and important purposes in the animal economy.

## SECTION II.

*Of the Origin, Secretion, and composition of the Fasting Saliva, as the fluid that first mixes with the bread, in the mouth in its passage through the gula; and in its descent into the stomach as the sole cause of the foregoing salutary effects.*

I observed in the first section, that few physicians had sufficiently examined the recrements of the body; and so far looked into the mysteries of nature, as to consider for what purposes and uses in life, they were separated and secreted into their

proper channels and receptacles; for we daily perceive, that the saliva, the pancreatic juice, and the biliose humors, are three liquors secreted from their respective organs, that serve great and eminent purposes in the animal economy; and as the saliva, or what we call the spittle, is the last and most considerable of the secretions, so I think it will be proper to examine the nature, properties, and constituent principles of a fluid, that is often the cause of considerable changes and alterations in life.

Now the three grand recrements of the body, *viz.* the saliva, bile and seed, are three principles, that not only preserve life and health in the individuum; but the last secreted fluid is that sacred balsam, that has continued the species from the beginning of the world to this time, and which will so continue it, to the latest period of nature; and therefore methinks they deserve a more particular enquiry, than what I perceive physicians, hitherto, have been pleased to bestow upon them; however, I shall in this little tract only proceed to examine the recrement of the saliva, the principles of the juices secreted in the stomach, and the properties of the bile, as subjects the most proper at present for my enquiry; and shall postpone the last to a more convenient opportunity.

However, before we proceed to discover the powers, efficacy, and operation of the fasting spittle, I judge it highly necessary that, in the first place, we proceed to examine the origin, secretion, and composition of this noble fluid, as it is separated from the arterial blood; because upon these principles most of its active powers, in a great measure, will be found to have their dependance.

The saliva, or what we call the fasting spittle, is originally secreted from the arterial blood by two complex glands, called the parotides, which, according to *Steno* and *Nuck*, two accomplished anatomists, lie at the root of the ear, one on each side of the neck; these glands seern the grosser saliva; and, by means of a number of little small tubes, arising from the inner coat of these glands, convey the secreted liquor into one common duct, which, near the third upper grinder, opens into the mouth, whereby the the jaws, tongue, and all the inner parts of the lips, are moistened with the viscous, secreted spittle.

But, besides these two secretory glands that furnish out the grosser secretions for moistening the mouth in general, there are discovered, by later anatomists, divers other minute, conglobate glands, that secrete a finer, thinner, and more attenuated fluid: these have their roots in the palate, tongue, gums, and lips, all whose membranes are perforated with little small tubuli, that let into the mouth a fine, thin, volatile saliva, somewhat more more attenuated than the former: however, all these fountains of the spittle are so commodiously situated,



that they must necessarily, upon closing of the lips, pressure of the jaws, and combining or compressing of the cheeks, squeeze out a good quantity of their contents into the mouth, for the separating, moistening and dissolving of the aliments we take for the support of life.

And this is the reason why these glands discharge the greatest quantities of their secreted liquors during mastication, or when we chew our food; because then there is not only the greatest pressure upon these organs, but at the same time, all the parts of the mouth are put into greater motions and compressions, than at any other time whatever; for, to make the experiment, if you please to grind close the teeth, and at the same time compress your cheeks with the lips, you will readily perceive a larger discharge of saliva to ooze from these respective glands, than when the same lie still, are at rest, and under no compression.

But, of all the remedies prescribed, we ought not only to know their origin, nature, and production, but also to endeavor to penetrate into the principles, powers, and properties, they consist of, whereby we shall be better enabled to discover their manner of action, and the different efforts they exert upon the various organs of the animal economy.

As to the saliva, when all the different secretions are intimately mixed in the mouth, and formed into one uniform, attenuated, frothy humor; the mixture then appears from experiments, to constitute a fine, thin, volatile, silver colored fluid, and which is secreted from the arterial blood in the carotid arteries, and called saliva or spittle.

Upon examination, it appears to be a composition of salt, oil, and sulphur, dissolved in a pretty large quantity of a fine, thin, attenuated phlegm, very nearly resembling the consistence of soapy water, to which it is very nearly related by the virtue of its qualities.

Under a sound state of health, it is without smell, perfectly insipid, or if it has any taste, it may properly be said to resemble the white of an egg. To the touch it is extremely viscid; easily mixes with oil, and therefore is oleose; it readily evaporates with the least force of fire, and therefore contains a large portion of volatile parts; and in its nature is mightily penetrant and abstersive, and therefore will destroy even the sphericity of the mercurial globes themselves, whose round figures are so difficult to destroy, unless you apply salts, fire, sulphur, or ingredients of an unctuous, adhesive nature.



## SECTION III.

*Of the Properties, Virtues, and salutary Effects of the Fasting Saliva, when externally applied to old Aches, Pains, recent Cuts, Wounds, old Uleers, Corns, Sore Eyes, and Gouty Nodes.*

IF we consider the fasting saliva alone, and as it is secreted from the salival glands situated in the jaws and mouth, we shall perceive divers great and remarkable effects to arise from its application; for this saliva may most properly be called the noble balsam of Nature, as it is a surer relief, in most cases, where outwardly applied, than what most people will easily be led to believe, that have not themselves tried its efficacy; I do not desire to be too sanguine upon the virtues of the fasting saliva; but shall only beg leave of the reader to lay down what I know to be matter of fact.

I am intimately acquainted with a gentleman, that every spring and fall was accosted with a very troublesome scorbutic tetter; he had taken mercury in all shapes, advised with several physicians, and by their advice had applied mixtures, ointments, and waters, prescribed for tettery humors, but without success; at last, he was advised to apply the fasting saliva every morning, which, in a fortnight's time, effectually cured him.

Nor do I know a better medicine for troublesome corns. A person of some distinction had a corn on the off side of his foot, that so shackled his limbs, as almost to reduce him to the state of a cripple; he employed the corn-cutter without effect; for every time it was cut, it both bled and pained him very much. These are usual accidents that happened from a nerve and vein, that entered into the composition of the corn, and whose sensibility and cavity were not totally destroyed by so hard a body; he had made use of plasters, balsams, ointments, lotions, and all manner of applications, but to no manner of purpose. He then accidentally asked a gentleman's opinion, and was advised every night to soak his feet in warm water and bran, and the next morning to apply chewed bread, well moistened with the fasting spittle, by way of a poultice, which, in a little time, perfectly relieved him; for the corn, in less than a week, tumbled out by the roots, and he has heard no more of it since. The like happened to a gentleman that was advised to apply the chewed bread, mixed with the fasting spittle, to a gouty nodes which mightily relieved him, and has kept his feet easy ever since.

In those hard excrescences we call warts in the hands, face, and divers other parts of the body, it is an infallible cure, if constantly used. It also mightily assists in relieving sore eyes, especially those whose eye-lids, from hard drinking, are red, angry, and inflamed: In these cases, if you do but lightly touch the parts affected, with this noble balsam, every morn-

ing, you will find great relief. And we know by certain experience, that in all cuts, recent wounds, and accidental hurts—that the fasting saliva is a sovereign remedy: And its penetrant dissolving abstersive qualities are so great, that if it be sufficiently rubbed with mercury, vulgarly called quicksilver, it will mortify that mineral, and destroy the sphericity of its globes, though one of the most active bodies in nature.

Great cures were performed by one *Bridget Bostock*, at *Nantwich*, in *Cheshire*, between the years 1740, and 1749.—  
 “This old woman, all her life-time, made it her business to cure  
 “her neighbours, and people that lived near her, of sore legs  
 “and other disorders, solely by fasting spittle. By her reputation, people came to her from all parts, far and near.”

#### SECTION IV.

*Of the vehicle most proper to convey this Sovereign Remedy into the stomach, in order to facilitate its operation and salutary effects upon the various viscera, organs, and fluids of animal bodies.*

HITHERTO we have considered the fasting saliva alone, and as it is applied to the external parts of the body; I am come now to speak of its salutary effects when it is mixed, combined and associated with the fine fluid secreted from the glands of the œsophagus, or gula, in its descent into the stomach; when it is combined with the stomachic juices secreted from the villous coat of that important organ; and the improvements it acquires, as a dissolvent, after it is got out of the stomach into the intestines, and thoroughly mixed with the bile and pancreatic juices.

And it plainly appears, from the observations we have made in the first section, that the bread is little or nothing concerned in producing these good effects, we so sensibly perceive to ensue, upon eating a crust of bread, in a morning fasting; nor can the virtues that follow, upon eating that concrete, be properly ascribed to the bread itself; for it never could be swallowed, did not the fasting saliva mix with it, and convert it to a pulposus substance, and thereby fit it for digestion; for no dry aliments ever could be swallowed, without a proper portion of the salival fluid; nor do I conceive, that any other liquid menstruum would serve the intentions of nature so well as the saliva; and this is the reason why the greatest number of salival glands are placed in the mouth, and, consequently, the greatest quantity of saliva separated from these glandular meshes, during mastication, or the time we are chewing of our food: for then there is not only the greatest pressure and motion in all the parts of the mouth; but the muscles of the jaws, cheeks, and lips, are more forcibly compressed, contracted, and put in motion, than at any other time; for these

glandular bodies, the fountains of the saliva, are so commodiously situated, that they must necessarily, upon any pressure of the cheeks, or closing of the jaws, squeeze out their contents into the mouth; and, to make the experiment, let any person grind close his gums and teeth, and, at the same time, straitly compress the muscles of his cheeks and jaws, and he will readily perceive a larger discharge of saliva to flow into his mouth from these compressions, than is usual from the same glands, at any other time; which plainly demonstrates how much the action of these muscles contribute to influence the discharge of these salival glands.

But if the relief given does not consist in the virtues of the bread itself, but in the secretion of the recrement, called the fasting spittle, then you will say, to what end and purpose serves a piece of bread, eat early in a morning, fasting? to this I answer; to very great and good purposes every way: for, in the first place, there is no other substance we know of, that can so properly be eat in a morning fasting, as a crust of bread, or that the stomach would so readily receive and digest as that concrete: secondly, of all other aliments, it is the most proper vehicle to imbibe and collect the fasting saliva; and therefore, of all other vehicles it is the fittest to be employed upon these occasions, as it best mixes with the saliva: thirdly, the force of the teeth, necessary to divide a crust, and break its cohesions, will more readily squeeze out the saliva from the several salival glands.

These are the reasons I offer in preference to a crust of bread: and therefore I judge, that no other concrete will so readily serve the purpose, as a crust of bread, unless it be what we call captains' biscuits, which they carry to sea for their own eating; these are still preferable to bread, as they are still harder than a crust, and more destitute of all foreign mixtures, as they are free from both leaven and yeast; but as these sometimes may be difficult to be had, so I judge a piece of bread, in general, the best vehicle we can substitute, in order to convey the fasting saliva into the stomach. And hence it clearly appears, that the virtue and efficacy that results from eating a crust of bread, does not so properly arise from the bread itself, as the chewing and mixing it with the fasting spittle; and therefore, to improve this fine liquid volatile soup, and exalt its virtues, I advise you, having eat nothing over night for supper, about five of the clock in the morning, to eat one ounce, or an ounce and a half, of either wheat or rye bread, which, in chewing, will take up full half an ounce of the fasting saliva, to reduce it into a proper, soft, pulpous substance, and which, when well chewed and moistened, will be easily swallowed; and when you have got it down into the stomach, then leave the rest to nature, and if you can, go to sleep. And it is advisable that you eat nothing for two or three hours af-

ter, which leads me to speak a few things of the consequences of its being got into the stomach, and of its mixture with divers of the secreted juices in the stomach and intestines.

Now this course, if steadily pursued for a month or six weeks, will prove of the greatest efficacy in divers diseases, that have obstructions and fabulous concretions for their parent, as the gravel, stone, gout, and rheumatism. Nor is it less efficacious in the tumours of the liver, spleen, and divers other organs; in all which cases it is known to give great relief.

## SECTION V.

*Of the improvements the Fasting Saliva receives from its mixing with the stomachic, the bilious, and pancreatic juices in the Stomach, Intestines, and parts adjoining; and in particular, of the nature, properties, and constituent principles of the Bile, as the greatest dissolvent in nature.*

But after this fine, thin, saponaceous fluid, we call the saliva or spittle, has left the mouth, and before it gets down into the stomach, it receives considerable improvements from a fine, thin, attenuated, volatile fluid, secreted from a number of glands situated in the head of the gula, which still renders it more penetrant and abstersive; it still acquires more force and energy from its mixture with the stomachic juices, discharged from the various glands, whose orifices form the velvet coat of this important organ; these supply the stomach with a fine, thin, clear, spumose fluid, that tastes a little saline and acid, but is very active and volatile in its properties.

This is ordained by nature to penetrate the foods, break their cohesions, and help forward their digestion for the nourishment of the body: and here a very fair opportunity offers itself for me to speak of the principles of digestion, and to discover how these important changes are brought about, that convert our aliments into nourishment, but this would be foreign to my intention, and be a means of rendering the discourse tedious, as my avowed design is brevity, and only to take a view of the secreted fluids as far as, in their course, they join with the fasting saliva, in order to exalt it into a fine saponaceous liquor, proper to relieve the body of its infirmities.

Thus it appears how much the fasting saliva is improved in its nature, properties, and action, from the lubricating lymph of the gula, the stomachic juices, and the chylous fluid, all continually digesting in the stomach; continually secreting from their respective glands, and continually flowing over the pilorus into the duodenum, where they mix and unite with the bilious and pancreatic juices, which greatly improve this noble, active medicine, and by their tumults, conflicts, and conquisitions, render it the most penetrant, abstersive, and dissolving medicine we know of in nature.

And because I have mentioned the bilious juice as an ingredient in this fine, volatile, dissolvent medicine, you will permit me here a little to examine into the nature, properties, and secretion of the bile, because it is a liquor that will be found to have very considerable effects and consequences in the various organs of the animal economy.

The liver is the organ ordained by nature for the separation, secretion, and ultimate perfection of the bilious humor; and I should immediately proceed to examine the principles and mechanism of this important organ, but that *Malpiagius*, that accurate anatomist, and our learned countryman, Dr. *Glisson*, have so fully exhausted this subject, that they have left but little that is new, to be said by those that come after them: And as I am only to observe the nature of secretion, the principles of the bile, and the uses and purposes for which it is ordained to serve in life, so I judge, that the course of the vessels, their various ramifications, and their aptness for the secretion of this humour, will furnish out every thing necessary to be known upon this subject.

However, I think it proper here to observe, that the modus of secretion of the bile in the liver, is different from the humours secreted in all the other parts of the body; for in all other parts the secretions are usually made from an artery, but in the liver nature has inverted that order, and makes use of a vein: and therefore the vena porta is appointed for this important office: this vein receives the blood from the spleen, from the mesenteric arteries, and from almost all the organs situated in the lower belly; this sanguineous fluid moving much slower in the Vena Porta, than it would have done in an artery of the same structure and mechanism, is the sole cause why the bilious salts are so readily disposed to attract each other, and form a fluid with that viscosity, necessary to give consistence to the bile, and for this end and purpose the Vena Porta and biliary vessels are enclosed in one common sheath or capsule; they enter the liver on the concave side, and are equally distributed through all its substance; so that wherever there is a branch of the one, there, upon good inspection, you will be sure to discover a branch of the other: and therefore each lobe, and each gland of that lobe, whether on the convex or the concave side, receives the same vessels, viz. a vein, nerve and artery, called *Arteria Hepatica*, to convey the nourishment for the use of the liver.

The Porta receives the blood from the neighboring parts, which is very sharp, by reason of the close union of the bilious salts; for the lymph that kept them asunder is separated from the blood by the glands of the stomach, intestines, pancreas, and mesentery; and, therefore, if this sharp, detersive, saline bile, did not continue to circulate with the blood, it must frequently occasion vehement fevers, colliquative fluxes, heart



burnings, and severe cholic pains; but these miserable effects are often prevented by a soft oleous fluid, that tempers these sharp, keen salts, and blunts their acrimonious effects, both upon the intestines, and parts adjoining.

In the secretion of the bile, we are to observe, that the Vena Porta Hepatica terminates in little small glandular folliculi, that secrete the bile from the blood; from these small glands the bilious humor is received into the extremities of the pori biliarii, as they inosculate with the extremities of the Vena Porta, and which, by their unions, form one trunk, called the Ductus Hepaticus: This trunk empties part of the gall into the gall bladder: from the gall bladder arises the Ductus Cysticus, which uniting with the Ductus Hepaticus form one common trunk, called the Ductus communis Cholidocus, that conveys the gall into the duodenum, near its curvature, that forms the beginning of the jejunum; so that only part of the gall flows into the Vesica Fellea, by the Cystick Duct, while the other part is conveyed into the intestines by the Ductus communis Cholidocus, that opens into that organ by an oblique insertion.

The bile seems to be a gross, thick, viscid, oleous phlegm, well impregnated with salts of various kinds, as sweet, bitter, acerb, muriatic, and bitter-sweet; all which are blended and intimately mixed in a small quantity of viscid phlegm: In this fluid, more than any other of the body, the oil and salts greatly predominate; for an ounce of black gall contained in the fund of the Vesica Fellea, yields oil and salts, of each three drams, of phlegm only two drams.

If you examine the gall in the liver, in the Pori Biliarii, and gall bladder, you will find it of a different consistence, colour, and bitterness, in all these three different situations; for the gall in the liver, or glandular folliculi, is of a pale green, more fluid, saltish, and less bitter; that in the cystic Duct more viscid, less bitter, but greatly partaking of saccharine salts: That in the gall bladder appears of a deep poracious green: And lastly, that in the fund, inclining to a blackish hue, and which is more viscid, less salt, but contains more of the bitterish twang.

I could not but be thus particular upon the nature, principles, and secretion of the bile, because our great master, *Hippocrates*, avers, that the ingredients of bile are generated with the first principles of life; and when it happens to be vicious, redundant, or defective, fails not to become the parent of most diseases that any way can affect the constitutions of animal bodies, especially those that are hot, fiery and inflammatory: And though every constitution must necessarily generate a bile, yet a tense, springy constitution, or a constitution with very elastic fibres, must necessarily have this humour in the largest proportion; and these liable to generate much bile, are

very prone, spring and fall, to fall into loosenesses, fluxes, and the cholera morbus, which is what we call a bilious vomiting, accompanied with a looseness, where great quantities of yellow, green, black stools are discharged.

## SECTION VI.

*Of some other sovereign properties of the bile; as it both promotes the digestion of our aliments, assists the circulation of the blood, and helps forward the glandular secretion in every part of the body.*

BUT I have not yet done with the bile; for it is a secreted humour, of that vast service and use in the animal economy, that I very much question whether either health could subsist, or life itself be continued, without its assistance; for this bile, I am speaking of, is a secretion so universal, that I do not know one single species of animals destitute of this noble secretion; for man, beast, reptiles, and the various classes of the fish kind, all have bile; and, in all these different subjects, it is the bitterest humour in the whole body; which is a strong argument with me of the necessity of bitter medicines in divers cases of diseases, especially when they are properly applied.

Now the bile is so copious a subject, and affords so many experiments to enlarge upon, that I could write a very large volume on the principles, nature, and virtues of the bile alone, without exhausting the subject: And we find by experience, that all people of a hot, choleric, dry constitution, are inordinately subject to be hot, furious, and passionate, in proportion as they generate a greater or lesser quantity of bile: However, I will not say that any one of the secreted liquors or recrements are the sole cause of life and health; yet this I will aver, and am able to demonstrate, that neither health nor life can long subsist, where the recrements of the saliva and bile are for any considerable time obstructed: And it is the observation of all the naturalists, that the bile greatly differs in its own nature; for in the larger animals it is less acrid and sharp, than those that are little; in beasts than birds, and in birds than fishes, and in fishes than the various tribes of insects: However, in Man, we discover the most tinging bitter bile, that is in any animal whatsoever; for it is so intensely bitter in this animal, that one drop will communicate a bitterish twang to two ounces of water; and the same quantity will tinge half a pint of the same fluid with a fine, beautiful, palish green.

But to be a little more explicit upon this subject: As it is a point of such importance to the health and lives of animals, I lay it down as a principle, not to be contested, that life itself depends upon a regular and uninterrupted circulation of the

blood and fluids through the several organs of the animal economy; this constant and equal motion of the blood is kept up by the circulation of the bile, that every where destroys the tenacious, thick, viscid particles of phlegm that renders the blood ropy, stagnant, and apt to fur up the minutest arteries.

This bilious humour, from its inciding, penetrant, and dissolving qualities, not only assists the circulation, but also is greatly concerned in promoting the separation of the chyle from the fauces, or matter of our stools, assists its passage into the lacteals, and then cuts, divides, and corrects the viscid slime, that often adheres to the coats of the stomach and intestines; blocks up their secretions, and is a frequent cause of very severe cholic pains.

But, amongst all the salts of the bile, which are both volatile and fixed, there is a peculiar essential salt, endued with a very sweet property: These essential saccharine salts more readily join with the chyle in the intestines, than any other; and this is that salt that gives to the chyle both its sweetness of taste, and that whiteness it obtains after it has passed the *Venæ Lactæ Primi Generis*: This saccharine salt also gives to the urine of those that labor under the diabetes, that sweet taste we often discover in those that, for any considerable time, have been subject to this disease.

If we proceed farther in our enquiries, we shall discover by experiments, that the bile of animals absterges like soap, and renders oil miscible with water; as to its virtues, it penetrates, attenuates, and resolves all obstructions in every part of the body, and affects rosins, gums, and other tenacious bodies, by a dissolution of their texture; whereby they are brought to mix with any fluid they are applied to: this bile or gall is neither alcalious or acid, but seems a combination of various salts, oils, and sulphurs, diluted in a pretty large quantity of phlegm; there is no question to be made, but that the principal use of the bile is to separate, attenuate, and sheath the asperities of the chyle by its oils and sulphurs; to blunt the acids by its oleous corpuscles, and to assist the circulation of the blood in the veins and arteries, by its stimulating powers; it also proves a stimulus to the intestines, and thereby facilitates the descent of our excrements, and without which we should be perpetually costive, and seldom go to stool.

As the bile is the hottest and sharpest of all other humours in the body; so in its circulation, it every where irritates the fibres of the veins, nerves, and arteries; and thereby keeps up the circulation of the blood, and frees the glands from obstructions; so that without the circulation of the bile, and constant secretion of this bilious humour, the circulation of the blood would be languid, the secretion of the several humors stand still, and life itself be extinct; for there is no other power, that we know of in nature, capable of keeping up the blood's



motion, save the bile: and therefore, in the blood, these bilious salts are set at such a distance from each other, as only to irritate the veins and arteries to a degree, as may keep the blood in motion, and help forward the secretion of the several respective humours to their destined ends and purposes of life; but as the stomach and intestines are composed of more solid coats, so, to make any suitable impressions upon their viscid, slimy secretions, there was a necessity for a more active, volatile, inciting humour: and therefore, as the bile came to be secreted in the Vena Porta of the liver, it was deprived of its fluidity, that a greater quantity of its various salts might be concentrated in a smaller portion of phlegm; for by this means its salts are so nearly collected, that they form a thick, viscid, saline, bitter humour, whose office is to stimulate the intestines, keep up their peristaltic motions, and help forwards the descent of the excrements, and without which they would be apt to stagnate in the intestines, and create obstinate costiveness and severe cholic pains; so that the bilious salts serve several ends and purposes in life; for as they exist in the blood so they assist the circulation; as they are secreted in the liver, and flow into the intestines, the more fine parts help forwards the separation of the chyle, and its secretion into the lacteals, while a grosser portion of the bilious salts mix with the excrements, and facilitate their descent; and without which the animal itself neither could well subsist under a sound state of health, nor continue in life for any considerable time.

After so much said concerning our enquiries into the nature, principle, and secretion of the bile, I shall only observe on the fluid secreted from the pancreas, that it is a fine, thin, lymphatic liquor, whose office, when mixed and incorporated with the saliva, stomachic juices, and bile, serves to dilute and attenuate the chyle, and facilitate its motion into the lacteal vessels; which leads me to treat of the efficacy of the saliva, when duly mixed, properly incorporated, and perfectly united with the foregoing liquors, whereby they arrive at the highest perfection their several natures are capable of; and of whose effects and consequences, in divers diseases, we shall treat in the following section.

## SECTION VII.

*Of the operation of the Fasting Saliva, when inwardly taken, and mixed with the pancreatic and bilious juices, in the Scurvy, Gravel, Rheumatism, and divers other diseases incident to obstruct the blood, and vitiate the secretions in the internal habit.*

WE have now seen in the fourth section what this fasting spittle will do alone, and when outwardly applied, in divers external diseases: I come now to speak of its effects and virtues, after it is mixed with divers secreted liquors, in its pas-

sage from the mouth, till it becomes a secreted liquor into the mouth again. If the fasting spittle, after the bread has been well moistened with it in the mouth, is charged into the stomach, it then, in its passage, meets with the lubricating lymph of the gula, which, from its spirituous, active qualities, very much improves the fasting saliva; and after its descent into the stomach, there the stomachic juices are continually secreting from their respective glands; continually mixing with the ingested spittle conveyed into the stomach with the meat we eat, till digested into a thin, light, volatile spume or froth, they, from their lightness and tenuity of parts, flow over the pilorus into the intestines, where all these various fluids of the saliva, of the secreted liquor, issuing from the glands of the œsophagus, and stomach, are united in the duodenum, and intimately combined with the bilious and pancreatic juices, discharged from their respective pipes, into one uniform mass or soap.

And having brought the fasting saliva through a course of digestions, to mix with the bile and pancreatic juice in the intestines; it appears to me, from the very nature and properties of the bilious humours thus new-modelled, from the access of the various secretions, that we have generally confined the gall and pancreatic juices to answer very imperfect purposes of life; as if they were secreted for little else, but, by their bitter and acid salts, to dissolve our aliments in the stomach and intestines, to facilitate the descent of the fœces, and give the depurated chyle a passage into the lacteals. But upon a more attentive view of things, we shall perceive that the bilious humour serves very great and important ends of life in the animal economy; for were this liquid, volatile, animal soap, of a very active, cleansing, penetrant and abstersive nature, by the largeness and union of salts of various natures, as of bitter, sweet, salt, acrid, alkalious, and muriatic, all combined into one substantial fluid; it will necessarily happen, that such a uniform liquor will be able to dissolve all manner of viscous humours, and fabulous concretions, that fur up the mouths of the lacteals, obstruct the passage of the chyle, and dispose all corrupt humours to discharge by stool, urine, and insensible perspiration.

This fluid the saliva, by the improvement it receives, as above described, being admitted with the chyle into the lacteals, attenuates, dissolves, and liquifies any fur or coagulum, that may stick or adhere to the coats of the lacteals, or obstruct in the vessels of the Receptaculum, Chili, or Ductus Thoracicus. For the fine, thin, depurated, chyle contains Globules of a larger size than any to be found in the blood itself; and therefore are apter to stagnate in these fine white tubes, called *Venæ Lactæ primi and secundi Generis*, than in the vessels of any other parts of the body.

Therefore if it enters the lacteals, and gets into the blood, it purifies that fluid, dissolves all preternatural lentours, scour the glands and cleanses their emunctories, whereby the veins, nerves, and arteries, are cleared of all embarrassing obstructions, and the course of nature carried on with the greatest harmony and accord.

In the kidneys, ureters and bladder, it is known to increase the separation and secretion of the fluids in the urinary passages; so that a man may observe himself to discharge more urine after he has eat his crust in a morning fasting, then at any other time of the day: Again, this noble fluid, by its oleous and balsamic qualities, abates pain, and assuages the inflammation of the parts, as is very usual where either much gravel or large stones have frequently passed these several organs: As this fine, balsamic, liquid, compound soap, is endued with soft, oleous, and balsamic properties, whereby it may sheath the asperities of the acrimonious salts, and attemperate all sharp humours; so it abounds also with sharp, acid, inciding salts, both volatile, essential, and fixed; whereby it attenuates, breaks, and dissolves, all sabulous concretions, rectifies the intemperatures of the blood, that may intercept the motion of the fluids in every part, and carries its virtues to the extremest organs of the body: nor does it only contribute to destroy the most stubborn diseases, but also mightily serves to preserve the body in health; for where the circulation of the blood, the secretion of the juices, and discharge of the excrementitious fæces and fluids are constant, regular and uniform; there the health is in the highest perfection a man can possibly arrive at, in this imperfect state of nature.

### SECTION VIII.

*Of the force and efficacy of fasting and abstinence, under the operation of this fine, penetrating, abstersive animal soap.*

I do not presume here to treat these subjects of fasting and abstinence as a divine, who intends, by his advice and counsel to mortify the body or soul, and better the conscience; but as a physician, who is desirous to preserve the strength, health, and motions of the body of his patient, steady, uniform, and regular.

Every one must be sensible, what great things have been promised from quicksilver, tar-water, and divers other quack pills, powders, and elixirs, in the gravel, gout, dropsy, and various other diseases: but I declare, that if the advice I offer for the benefit of mankind, be but carefully observed, and punctually put in practice, that many will not only receive great relief, but an entire exemption, from the most obstinate and stubborn diseases.

For we ought ever to consider that nature is on the side of

health, and continually striving to restore the constitution, whenever borne down by the force of a disease; so that seldom can any obstructions happen to the body, but that repletion or gorging more than nature can digest, is the cause; and which, when often repeated, brings on indigestions in the stomach, windiness or flatulencies in the bowels and intestines; a corruption of humours in the blood, and various obstructions in different organs of the habit: These are the parents of most diseases, that are incident to affect us in life; for what is the scurvy, but a thick, viscid, ropy blood, unable to pass the finest strainers of the several organs? and how comes it by these properties; but by the indigestion of our aliments? The same we may observe of cholic pains, the asthma, and dropsy; their original cause undoubtedly arises from indigestions; nor is the generation of gravel and stone less owing to the same causes; for when our foods escape the force of the stomach, not thoroughly digested, they never after can receive the assimilating power from any after-impressions the subsequent organs can lay upon them, but become the cause of various obstructions in the small organs of the body: Hence arise wind in the stomach, pains in the intestines, rheumatisms in the limbs, and schirrous tumours in the liver, spleen, and divers other parts.

Now, under these circumstances, to bring nature home to herself, the first thing must be to prescribe abstinence from all flesh meats, for the compass of a week, if the disease be recent; three weeks or a month, if the same has been of any long continuance: This will give nature time to recover herself; what I mean by nature recovering herself is, that there are certain restitutive powers in every organ and fibre of the body, whereby nature, when any organ is obstructed or oppressed, strives to recover its former tone. And this self-restoring power is partly the effects of the fluids, and partly lodged in the organs themselves, and the mechanism that constitutes their powers of force and motion.

Now in any great pressure, from a load of foods changed into the stomach, there is nothing that gives so sure a relief as fasting and abstinence; for these vacations from aliments, enable the fibres of the stomach, viscera, and other organs, to resolve the obstructions, to break the cohesions of the blood, and enable nature to root out the most stubborn diseases, by flinging their causes off by either stool, urine, or insensible perspiration, or sometimes a profuse sweat: Nor can there be a more noble, safe, and efficacious remedy to rid us of either stone, gravel, or gout, than what I now offer for the relief of mankind; that is abstinence, fasting, and a crust of bread eat early in a morning fasting; or rather the fasting saliva charged into the stomach, by the assistance of a piece of bread: And in these cases it is necessary that we take nothing of aliments for two or three hours after.

Give me leave here to recapitulate, as briefly as I can, the virtues of one of the greatest dissolvent medicines in nature ; and at the same time one of the safest that ever was communicated to mankind ; a remedy that, if steadily pursued, will cure both the gout, the gravel, the stone, the asthma, and dropsy. Would you know this invaluable secret,—It is abstinence.——I say abstinence ; the most effectual cure in all diseases ; But by the word abstinence, I do not mean a mere negative remedy, as if fasting was to do all the work, by suffering nature, at her leisure, to attenuate the fluids, resolve the obstructions, and digest off the obstructing matter ; Nothing like it ; for we have given you the form of this medicine above, told you the ingredients, and whereof this excellent remedy, so assisting to nature, is composed ; and must leave yourself to judge of its efficacy and operation.

However, to make some pertinent reflections upon this subject, I beg leave to observe, that after the whole quantity of chyle is digested in the stomach, and conveyed into the intestines ; thereupon the fasting saliva, the lubricating lymph of the gula, the fluids secreted from the fine velvet coat of the stomach, are all continually separating from their respective glands ; continually digesting in the stomach, and continually flowing over the pilorus into the duodenum ; there they are mixed, united, and intimately combined with the pancreatic and bilious juices ; and which, by their conflicts, tumults, and conquassations, produce a most fine, thin, attenuated fluid ; this fluid being admitted into the lacteals, resolves the obstructions of the mesentery glands, every where seated near the lacteals ; attenuates, dissolves, and liquifies, any fur or coagulum, that may adhere, or stick to the sides of the lacteals ; and prevent its entrance into the Receptaculum Chyli, or Ductus Thoracicus. In a word, this fine, volatile, saline fluid, from the various secretions mixing with it, becomes a universal dissolvent : and is intended and separated by nature, to break the cohesions of the obstruent matter, that may cleave to the coats of the vessels in every part of the body : and from this natural observation, we may learn the great benefit of frequent fasting, not only to preserve the body under a sound state of health, but also how mightily serviceable it is in relieving divers diseases ; and how efficacious it is in the gravel, stone, rheumatism, and divers other diseases, that have obstructions for their parent.

You see now that, after all, we discover this to be no imaginary medicine, formed upon the negative principles of fasting and abstinence, as if they were to do all the work themselves, but on the solid grounds of the fasting saliva, combined and united, with the liquors secreted from almost every organ of the body, whereby it is empowered to dissolve all unfriendly cohesions in the blood and animal juices ; force open, break



down, and unbind those stubborn obstructions, that impede the motion of the fluids in the first passages; so that there is scarce a nerve, vein, artery, or gland, in the whole animal economy, but what must necessarily receive some benefit, from the daily operation of this fine, liquid, animal soap.

## SECTION IX.

*Of the Air, Diet, Exercise, and other requisitorial Rules, necessary to be observed, in order to facilitate the operation of this liquid Soap, which I esteem a most invaluable remedy.*

Thus we have discovered the operation of this noble and most sovereign remedy in the Scurvy, Gravel, Rheumatism, and divers other Diseases; which leads me to speak a few things of the Air, Diet, and Exercise, necessary to be observed, in order to facilitate the relief it gives in the most stubborn diseases.

But before we can expect to accomplish all these fine effects enumerated in the foregoing pages, I hold it highly necessary that a proper air, a regular diet, and a well adjusted exercise, should be enjoined the patient: as to the air, which is the first thing we ought to consult about, I judge it highly necessary that the patient should sojourn in a soft, free, open air; on a ground rather rising; in a place free from woods, fens, or high mountains, that may intercept the pure, balsamic properties of this healthful, enlivening fluid, the air. By all means, if he is subject to either the gravel, asthma, or rheumatism, let him avoid living in great cities, which are pernicious to those incident to the foregoing diseases; and therefore my advice is, that he take the medicine in the country, if possible, as the goodness of the air will assist its operation: but if his business calls him to the city, and he cannot possibly stay in the country, he must not, by any means, intermit the medicine, but pursue its use a month or six weeks in the best manner he can, without intermission: from which, in most diseases, that are lodged within the compass of the circulation, he will receive considerable benefit.

Having done with the air, the next thing to be observed, is the patient's diet; and I choose to begin with his diet in the morning, because there are several nice circumstances necessary to be adjusted, in order to facilitate the operation of this sovereign remedy, we call the fasting spittle. And therefore I advise the patient to eat his breakfast about ten of the clock in the morning: And, under a fit of the gravel, I would advise him to drink three or four dishes of a tea, made either of mallow flowers, or, if the season does not permit them to be had, let him use the mallow leaves, sweetened with honey, with a slice or two of bread and butter, as the best breakfast he can have.

An hour or two after breakfast, let him exercise; I prefer that on horseback; but if the weather happen to be hazy, and not promising, he may then, for two or three hours, take the air in a chariot, close chaise, or coach. When I speak of exercise, I always suppose the patient is entirely free from any pains of the gravel or stone.

After his return, if he finds himself refreshed, he may take a walk in the garden, or about the house, or busy himself for the remainder of the time between that and dinner, in his study; but above all things, let him take care he does not habituate himself to drink wine, or anything that is strong, in the morning, before dinner; for many, by that means, have destroyed their appetite, and forever after spoiled a good digestion; so that whatever they have ate at noon, has turned to wind and crudities, and subjected them to severe cholic pains.

When he sits down to his great meal, or dinner, I permit him to eat of everything, so it be not too salt; for salts, of all kinds, are undoubtedly ingredients of both the gravel, stone, and rheumatism; and these ingredients furnish out the cause of frequent fits in these diseases: and therefore the young, of all animals, are to be chosen, as they consist of the lightest salts, and such as are easily dissipable by urine, sweat, and perspiration; and seldom concrete, as they are not endued with that degree of attraction as are the salts of older animals.

Between dinner and supper, I would not advise him to touch anything, unless a dish or two of tea or coffee, with a slice of bread and butter; for the great point is so to order the air, diet, and exercise, as to be able to bring all the motions of the animal organs to a due temperature, and then we shall greatly promote the operation of this salutary remedy, and render its virtues highly efficacious.

His supper I would advise him to take about six or seven in the evening, and by no means later; and as milk is phlegmatic, so, if he pleases, he may take half a pint, or more, of white wine whey, with a sea biscuit; or, if it pleases him better, he may take a slice of new cheese, and drink a few glasses of old port, or a pint of fine soft ale, with about six ounces of the crust of a French roll or minchet.

After these things are done, I advise him not to eat anything till about six, seven, or eight of the clock the next morning, which is the time of his taking the grand medicine: This consists of half an ounce, or six drachms of the fasting saliva, pressed or squeezed out from the salival glands into the mouth, by the pressure of the jaws and teeth, in eating an ounce or ten drachms of the crust or heel of a loaf, made of the purest wheat; for the crust occasions much the greater pressure from the teeth, whose greater force occasions a greater discharge of this salival fluid, and which will answer all the purposes we declared in the preceding Sections.







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